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Biotechnology Notes

Volume 5 • Number 6

U.S. Department of Agriculture

June 1992

Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

GOSLAR: A GLOBAL LOOK AT FIELD TESTING

Almost two hundred scientists and policymakers from 29 countries met in Goslar, Germany, May 11-14, at the Second International Symposium on "The Biosafety Results of Field Tests of Genetically Modified Plants and Microorganisms." The first symposium took place in 1990 in Kiawah Island, South Carolina.

Discussions at Goslar focused on field testing traditionally bred organisms as well as those plants produced using the latest biotechnology techniques. In addition to panel sessions on bioremediation and food safety, participants also met at evening workshops to discuss policy issues, bioinformatics, and the status of biotechnology in developing nations.

Zhang-Liang Chen of Peking University, Beijing, China, described the progress made in field testing recombinant *Rhizobium* over 2.5 million acres of land. In addition, he reported on success in field testing pest resistant tomato, tobacco, and potato on 500 acres.

To receive meeting abstracts, please call the Office of Agricultural Biotechnology (OAB) at 703-235-4419; Fax: 703-235-4429. The full proceedings will become available later this year.

NEWS AROUND THE NATION (AND THE WORLD)

ABC MEETING CUTS A WIDE SWATH

"We're only at the threshold of the biological revolution," said David Galas, associate director of health and environmental resources at the U.S. Department of Energy, at the sixth annual meeting of the Association of Biotechnology Companies (ABC) in San

Diego, CA, May 16-20. Speaking to a record crowd of almost 800 people, Galas went on to present his view of the future of biotechnology, which he believes will require more of an interdisciplinary approach to research.

The meeting featured about two dozen breakout sessions on many topics. Especially noteworthy was some advice offered to young firms by Wall Street analyst Marcia Kean. She cautioned them about getting caught up in the public relations fast track, overstating market size, and not clearly understanding the path to commercialization.

Kathryn Zoon, director of the Food and Drug Administration's (FDA) Center for Biologics Evaluation and Research, said FDA's biotechnology policy supports strong, scientific programs at the bench and during clinical trials. She said FDA has a "pro-active" approach to regulation through clear communications, and a strong and vigilant approach to enforcement. Their policy does not favor new regulations for biotechnology-derived products.

ABC's next annual meeting will be April 13-16, 1993 in Research Triangle Park, NC. For more information call 202-234-3330.

FDA ISSUES FOOD POLICY

On May 29, FDA published its long-awaited policy for regulating the safety of new varieties of foods, including those produced through biotechnology. It says, in effect, the agency will regulate the food product -- not the method by which it was developed -- under existing laws. The policy also includes a section designed to guide industry in assessing the safety of novel foods. FDA is asking the public to comment on its policy by August 27. In addition, the agency is seeking public comment, no later than July 28, on scientific issues relevant to Calgene's FLAVR SAVR™ tomatoes. For more information call Brad Stone in the FDA press office at 202-245-1144.

MORE-ATORIUM

The 90-day moratorium on new Federal regulations, which began last February, has been extended by four months, said President Bush at a briefing held April 29. He said the Government has already realized a savings of \$20 billion.

ANTISENSE MAKES SENSE TO PATENT OFFICE

Calgene Inc. was issued a patent April 22 for the use of antisense technology in plants which Calgene says, "is not restricted by any limitation as to the type or species of plant cell."

Using antisense technology, Calgene researchers developed the FLAVR SAVR™ tomato. The Davis, CA based company says the technique will be used to improve the freshness of fruits, to develop naturally decaffeinated coffee, carcinogen- and nicotine-free tobacco, and higher quality fresh vegetables and cut flowers. Calgene says it plans to develop partnerships to help spread this new base of knowledge.

1992 ATCC LAB WORKSHOPS

The American Type Culture Collection (ATCC), Rockville, MD, holds workshops throughout the year on bacteriology, cell culture, molecular and plasmid biology, recombinant DNA techniques and applications, DNA sequencing, and other subjects. For a course catalogue, please call 301-231-5566; Fax: 301-770-1805.

EPA ISSUES EUP TO MONSANTO

On April 10, the Environmental Protection Agency (EPA) issued an environmental use permit (EUP) to Monsanto Co., St. Louis, MO, to conduct large-scale field tests of transgenic cotton plants in 10 states. As reported in the February 1992 issue of *Biotechnology Notes*, small field tests of transgenic cotton plants have already been conducted by Monsanto under a permit issued by USDA's APHIS. These latest tests will be done on 1/2 to 20-acre sites.

The EUP is for one year and became effective April 1992. The test sites are in Alabama, Arizona, Arkansas, California, Georgia, Hawaii, Louisiana, Mississippi, North Carolina, and Texas. For more details call Laura Dye at 703-305-6891.

FIELD TESTING IN JAPAN

Japan has approved its first test in a general field setting. The plant is a tomato with a capsid protein gene of tobacco mosaic virus. Like previous field tests, this one is also Government-sponsored. However, success with this general field test may spur private companies to begin testing the many varieties of transgenic plants now in greenhouses. Japanese companies are looking to other Pacific Rim nations and the United States as potential markets for foods produced with biotechnology.

HOW BIOTECH HELPS SUSTAIN GROWTH

An editorial in the January/February 1992 issue of *Agro-Industry Hi-Tech* says biotechnology can help in three ways to create environmentally sustainable growth in Europe. First, biotechnology will help to preserve natural resources by reducing the pressure to expand farmland as demand grows, thus helping arrest deforestation and preserving natural habitats. Second, biotechnology will protect the environment because it consumes less raw material, water, and energy. Finally, the use of engineered microorganisms to clean up toxic deposits or decompose noxious substances will help to prevent damage to the environment.

BIOTECH IN THE YEAR 2012

Where agriculture might be 20 years from now was the theme of a talk given by Ralph Hardy of the Boyce Thompson Institute, May 4, in the Rayburn House Office Building in Washington, DC. Hardy speculated that the seed industry will dominate the scene and chemicals and pesticides will be replaced with bio-based products. He sees "major opportunities" for products that have new, non-traditional uses and big strides being made in developing self-nitrogen fixing plants. Farmers, he believes, will become contract growers.

He predicts the major limitations in the year 2012 will be lack of scientific knowledge and financial, regulatory, and patenting hurdles. Hardy thinks communication will be the key to consumer and farmer acceptance of the new bio-based products.

ON THE ROAD WITH BIOTECH

The Catholic University of America's Center for Advanced Training in Cell and Molecular Biology is offering two courses in Lake Tahoe, Nevada, October 12-14, 1992. The course titles are "On the Road -- Recombinant DNA Methodology" and "On the Road -- Polymerase Chain Reaction Techniques." The fee is \$460 and the location is the Hyatt Regency Lake Tahoe Resort Hotel. For more details call the "On the Road" coordinator at 202-319-6161; Fax: 202-319-4467.

COCOA: EARMARKED FOR CHANGE

More than half of the world's cocoa production is concentrated in West African and Latin American nations. Now other countries are entering the market, according to the March 1992 issue of *Biotechnology and Development Monitor*, in a quiet race in which biotechnology could affect a shift in world production.

In Brazil and Malaysia, the Mars Company is using tissue culture to develop pest-resistant cocoa plants. Hershey and another corporation are using new technology to better understand mold-resistance, and Pennsylvania State University is looking at developing varieties of cocoa beans that produce their own sweetener. Other companies and academic institutions are using biotech to speed up the fermentation process and to develop substitutes for cocoa butter from cheap oils.

IN CASE YOU WEREN'T THERE

■ OAB Deputy Director Daniel Jones delivered the keynote address at the conference "Animal Biotechnology: Technology Transfer and Industrial Needs", May 17, in Chicago, IL at a meeting of the north central region coordinating committee on Application of Cellular and Molecular Biology to Animal Science Research. Jones highlighted the impact of Federal developments on animal science research and technology transfer. He said USDA's Agricultural Research Service (ARS) is using biotechnology to develop genetically engineered vaccines and to improve methods of diagnosing livestock and poultry diseases. The ARS genome project, said Jones, is designed to improve the quality of animal products by locating important genes and markers on chromosomes.

He said USDA's technology transfer program is beginning to yield benefits in patents and newly commercialized technologies. About 100, or half, of all of USDA's CRADA's have involved biotechnology. Some examples include a DNA probe for detecting carriers of a lethal genetic disease in dairy cattle and a multivalent vaccine against leptospirosis in swine.

■ On May 21 a public meeting was held at the National Academy of Sciences, Washington, DC, to discuss patenting of Federally funded genome research. The main topic was the National Institute's of Health (NIH) recent filing of patent requests on genome fragments. James Staton, OAB summer intern, attended the meeting. He said Bernadine Healy, Director of NIH, stressed that the patent requests had been filed in order to force a clarification of the laws and policies pertaining to intellectual property rights and to allow for more rapid dissemination of information. Healy also said patenting would protect knowledge developed with U.S. taxpayer money from being sent to foreign industries. She also said the Government would never seek to prosecute researchers for the use of patented material, as long as it was for the purpose of realizing a basic research goal.

Those opposed to patenting of genome fragments said such action could slow or stifle research and enable the Government to hold claims to future discoveries because of previously patented

fragments. The idea of an experimental research exemption on any such patents was endorsed by many speakers at the meeting. Various other views and options are now being considered by the Genome Patent Working Group, a working group under the Federal Coordinating Council for Science, Engineering and Technology.

NEW PUBLICATIONS

■ "Supplement to ABRAC Minutes: Guidelines for Research Involving Planned Introduction into the Environment of Genetically Modified Organisms." March 1992. Copies are free of charge and may be obtained by calling the OAB at 703-235-4419; Fax: 703-235-4429.

■ "DOE New Technology: Sharing New Frontiers", prepared by the U.S. Department of Energy. January 1992. To order a copy write to the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161.

■ "Appraisal of the Proposed FY 1993 Budget for Food and Agricultural Sciences." Report to the President and the Congress from the National Agricultural Research and Extension Users Advisory Board. February 1992. To receive a copy write to Ms. Marshall Tarkington, USDA, Users Advisory Board, Rm. 432-A, Administration Bldg, 14th and Independence Ave., S.W., Washington, DC 20250-2200.

■ *Biotechnology: EEC Policy on the Eve of 1993*. Published by European Study Service. 1992. Ordering information may be obtained by writing to European Study Service, Avenue Paola 43, 1330 Rixensart, Belgium.

■ "Social Consequences of New Biotechnology in Norway," by A. Benge. April 1992. To receive a copy, please write to A. Benge, Norges Landbruks-Vitenskapelige, Forskningsrad, Postboks 8154 Dep 0033, Oslo 1, Norway.

■ "U.K. Biotechnology Handbook 91/92." Prepared by the BioIndustry Association and BioCommerce Data. For more information, send a Fax to BioCommerce Data at 011-753-512239.

■ *Biotechnology and the Law*, by Iver P. Cooper. Published by Clark Boardman Callaghan, Deerfield, IL. 1982 (revised annually.)

■ "Program Solicitation: Small Business Innovation Research Program, Fiscal Year 1993." This pamphlet tells you everything you wanted to know about USDA's SBIR program. To receive a copy call 202-401-5048.

UPCOMING MEETINGS

June 10-12: Midwest Biotechnology Symposium '92. University of Iowa. Iowa City, Iowa. Call Bev Palmer at 319-335-8764.

June 14-17: ECO World '92 Conference and Exhibit. Washington, DC Convention Center. Sponsored by the American Society of Mechanical Engineers. For details call 1-800-843-2763 ext. 575 or send a fax to 212-705-7173.

June 20-24: "Molecular Crop Agriculture for the Pacific Rim" is the topic of the first conference in a series of the University of California, Davis-Pacific Rim Food and Agricultural Biotechnology Conference Series. Sacramento, CA. For details call Carolyn Norlyn at 916-757-3331; Fax: 916-757-7943.

June 20-25: 1992 World Congress on Cell and Tissue Culture. Crystal City, VA. For details please call 410-992-0946.

June 23: "Regulatory Policy Aspects of Biotechnology," with Jonathan Wiener, Office of Science and Technology Policy, Washington, DC. Sponsored by the Interagency Regulatory Colloquium. For details call Paula Cohen at USDA at 301-436-5456.

June 23-24: "Products, Regulators and Politics." The Hague, The Netherlands. Organized by *BioTechnology* Magazine. The focus is on biotechnology in Europe. In North America and Canada, call 212-477-9600; Fax: 212-505-1364. Outside North America and Canada, call 071-872-0104; Fax: 071-240-2408.

June 24-26: Corn Utilization Conference. St. Louis, MO. Co-sponsored by the National Corn Growers Association and Ciba-Geigy Seed Division. Call 314-275-9915.

July 1-7: "Towards Sustainable Crop Production Systems: Emerging Technologies." St. John's College, Cambridge, UK. Organized by the Royal Agricultural Society of England and the Agricultural and Food Research Council. Write to Katherine Fort, Symposium Administrator, RASE, National Agricultural Centre, Stoneleigh Park, Warwickshire, CV8 2LZ, UK.

July 14-22: First International Crop Science Congress. Ames, Iowa. For details call Iowa State University at 515-294-0706.

Aug. 16-21: Ninth International Biotechnology Symposium and Exposition entitled "Harnessing Biotechnology for the 21st

Century." Crystal City, VA. Hosted by the American Chemical Society. For details call 202-872-4485; Fax: 202-872-6067.

Aug. 18-20: Public meeting on veterinary biologics. Ames, Iowa. Sponsored by USDA's APHIS as part of its annual information exchange with producers of biologicals and other interested persons. For details call Frank Tang at 301-436-4833.

Aug. 24-28: International Symposium on Population Genetics and Gene Conservation of Forest Trees. Bordeaux, France. Sponsored by the International Union of Forestry Research Organizations. For details write to P. H. Baradat, INRA, B.P. 45 33611, Gazinet Cedex, France; or call 33-56-68-03-13; Fax: 33-56-68-02-23.

Aug. 26-27: Meeting of USDA's ABRAC. Rosslyn, VA. For more details please call the OAB at 703-235-4419; Fax: 703-235-4429.

Aug. 26-29: "BioJapan '92." Yokohama, Japan. Organized by the Japan Bioindustry Association. For details write to Secretariat of BioJapan '92 Symposium, c/o International Communications Inc., Kasho Bldg., 2-14-9, Nihombashi, Chuo-ku, Tokyo 103, Japan; or call 81-3-3272-7981; Fax: 81-3-3273-2445.

Sept. 22: "Fifth Annual Colorado Biotechnology Symposium." Fort Collins, CO. Sponsored by the Colorado Institute for Research in Biotechnology. For details call Vincent G. Murphy at 303-491-1791.

Sept. 24-25: Sixth Forum for Applied Biotechnology. Brugge, Belgium. Call for papers. Organized by the faculty of agricultural sciences of the University of Gent and by the Regional Development Authority of West Flanders.

Oct. 6-9: "Biobased Products Expo '92." St. Louis, MO. Sponsors include USDA, the Department of Energy, the Department of Commerce, and the Agricultural Research Institute. For more details call 301-530-7122 or send a Fax to 301-571-1837.

Oct. 13: "Conflict Resolution: Ethical Issues for Biotechnology." Washington, DC. Sponsored by the Washington Metropolitan Chapter of ABC. For details call Richard Okiuye at 202-234-3330.

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